

In the Drawings

Please add attached new Figs. 8 and 9 into the official file.

Remarks

The drawings stand objected to under 37 CFR 1.83(a). The Applicants note with appreciation the Examiner's helpful comments with respect to showing the subject matter of Claims 10 and 13. The Applicants have accordingly added and enclose new Figs. 8 and 9 which reflect the subject matter of Claims 13 and 10 respectively. Entry into the official file and withdrawal of the objection is respectfully requested.

The Applicants have amended the specification to include a brief reference to newly added Figs. 8 and 9. Entry into the official file is respectfully requested.

Claims 5-10, 18 and 27 stand rejected under 35 USC §112 as being indefinite. The Applicants note with appreciation the Examiner's helpful comments with respect to specific portions of Claims 5, 6, 10 and 18. All of those claims have been amended and the Applicants respectfully submit that they are now in compliance with §112. Withdrawal of the rejection is respectfully requested.

The Applicants have amended Claim 1 to include the subject matter of Claim 3. Claim 3 has accordingly been cancelled. Claim 6 has been amended to include the subject matter of Claims 1 and 9. Claim 9 has accordingly been cancelled. Claim 10 has been amended to depend from Claim 6 in view of the cancellation of Claim 9. Claim 11 has been amended to include the subject matter of Claim 12. Claim 12 has accordingly been cancelled. Entry of the above amendments and cancellations into the official file is respectfully requested.

Claim 11 stands rejected under 35 USC §102 as being anticipated by Nojiri. The Applicants respectfully submit that the rejection is now moot in view of the addition of the subject matter of Claim 12 into Claim 11. Withdrawal of the rejection is respectfully requested.

Claims 1-10 and 16-20 stand rejected under 35 USC §103 over the hypothetical combination of Schubiger with Nojiri. The Applicants respectfully submit that the rejection is now moot with respect to cancelled Claims 3 and 9. The Applicants also note with appreciation the Examiner's helpful comments hypothetically applying the combination against those claims. The Applicants respectfully submit, however, that even if one skilled in the art were to make the hypothetical combination, the structure resulting from that combination would still not apply to Claims 1-2, 4-8, 10 and 16-20. Reasons are set forth below.

The rejection states that in Nojiri, α will be approximately 90° and β will be an obtuse angle. Although the relation of α (90°) $<$ β (obtuse angle) is certainly correct, in this case $\alpha + \beta$ exceeds

180°, and this means that the fiber bundle is detached for the guide roll and accordingly, the above values are not realizable. Hence, in Nojiri, there is no disclosure in which a fiber bundle is hung on guide rolls at an angle consisting of $\alpha < \beta$ and, therefore, there appears to be a misunderstanding of Nojiri. Thus, the Applicants respectfully submit that Nojiri is inapplicable for this reason alone.

The Applicants respectfully submit, however, that even if one skilled in the art hypothetically combines Schubiger with Nojiri, that the result of such a combination would still be different from the subject matter of the above rejected claims. The roll disclosed by Schubiger employs a drive source to rotate a roll by making cone-guides contact the felt. When that method is applied to a fiber bundle, the fiber bundle is smashed by the cone-guides. Such smashing causes entanglement of the fibers.

Further, the rotational amount of the roll only depends on the frictional force between the cone-guides and the felt and has nothing to do with the amount of deviation of the path position of the felt, whereby excesses and shorts of the rotational amount are generated. That is, when the roll runs exceedingly due to the strong contact force with the cone-guides, the felt can be deviated from the original path position until contacting the cone-guides on the opposite side. In the worst case, the roll will vibrate between the two cone-guides. To the contrary when the rotational amount of the roll is short due to the weak contact force with the cone-guides, the roll cannot get back to the original path position and remains deviated.

In sharp contrast, in the Applicants' yarn path guide, because the guide roll is inclined in proportion to a deviation amount of the path position of the fiber bundle, there are no excesses and shorts in the adjusting amount of the yarn path and, accordingly, the yarn path can be stably guided to the original yarn path direction.

This is explained in the Applicants' specification in paragraphs [0070]-[0071]. Particularly, the effect of the subject matter in Claim 3 is described in the specification in paragraph [0046], lines 1-10.

That is, according to the Applicants' claims, the guide roll is so inclined as to minimize the path length by tension of the fiber bundle. The mechanism of the inclination of the guide roll is shown in the attached Fig. A. Fig. A(a) is a front view of Fig. 1 of the Applicants' specification and Fig. A(b) illustrates the mechanism of the central guide roll of Fig. 2(b) of the Applicants' original application.

The following are explanations of the symbols in Fig. A and moment M to incline the guide roll:

$$M = \Delta \times T (-\sin \alpha + \sin \beta)$$

α : angle between the rotating shaft direction of supporting member and the yarn path entering the guide roll

β : angle between the rotating shaft direction of supporting member and the yarn path coming out the guide roll

Δx : Variation amount of yarn path

T: tension

M: Moment to incline the guide roll

As mentioned above, external force applied to the fiber bundle is only tension and, accordingly, it is not that unnecessary external force by which the fiber bundle is smashed or deformed, can be applied. Thus, the fiber bundle can be guided to the original yarn path direction. However, Schubiger's roll cannot realize a yarn path guide which is able to guide a fiber bundle sustaining the fiber bundle in such a high quality state.

The Applicants therefore respectfully submit that even if one skilled in the art were to hypothetically combine Schubiger with Nojiri, that combination would still result in structure that is completely different from the structure recited in Claims 1-2, 4-8, 10 and 16-20. Withdrawal of the rejection is respectfully requested.

With respect to Claims 6, 7, 8 and 10, the Applicants respectfully submit that there are additional reasons why the combination is inapplicable. While the rejection points out that the subject matter of Claims 6-8 and 10 is considered as being obvious over the combination of Schubiger with Nojiri, an effect achieved by the Applicants cannot be achieved only by such a combination. In other words, it is important as to which guide roll a traverse guide is to be built in. In this respect, the Applicants' specification in paragraphs [0054]-[0056] and Fig. 4 provide guidance.

There is a distance between the upstream yarn path guide 12 (see Fig. 3) and the upper guide roll 14. Thereby a correction of the yarn path is enabled only by inclining a little bit the upper guide roll and accordingly, it is preferable to build a traverse guide in the upper guide roll.

The effect that guides a fiber bundle to the original yarn path direction by the Applicants' structure cannot be realized only by a combination of Schubiger with Nojiri.

Claims 12-15 stand rejected under 35 USC §103 as being obvious over Nojiri alone (Claim 12) or in combination with Nakai (Claim 13) or Schubiger (Claims 14-15). The Applicants respectfully submit, however, that the rejection is now moot with respect to Claim 12 which has now been cancelled and is inapplicable to the remaining claims for the reasons set forth below.

While the rejection states that it would be obvious that an angle between a rotating shaft direction of a guide roll and a yarn path direction is set at a right angle, in a conventional fiber bundle traversing device, the fiber bundle on the final guide roll is pulled in the opposite direction to the movement direction of the traverse guide during traversing. Thereby, the fiber bundle skips on the final guide roll so that the rotating shaft direction of the guide roll and the yarn path cannot have a positional relation twisted substantially at a right angle. Moreover, the problem as described above brings about the skipping of the fiber bundle on the guide roll or generating rubs of the fiber bundle when the fiber bundle runs inclined, which leads to deterioration of quality such as fluffing and the like.

In sharp contrast, in Claims 11 and 13-15, a fiber bundle does not skip on the guide roll and the angle between the rotating shaft direction of the guide roll and the original yarn path direction entering the guide roll has a positional relation twisted substantially at a right angle, whereby the problem can be solved. The Applicants accordingly respectfully submit that Claim 11 (previously Claim 12) is anything but obvious over Nojiri taken alone, Claim 13 is not obvious over the hypothetical combination of Nakai with Nojiri and Claims 14-15 are not obvious over the hypothetical combination of Schubiger and Nojiri. Making those various combinations would still not result in the Applicants' claimed subject matter. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



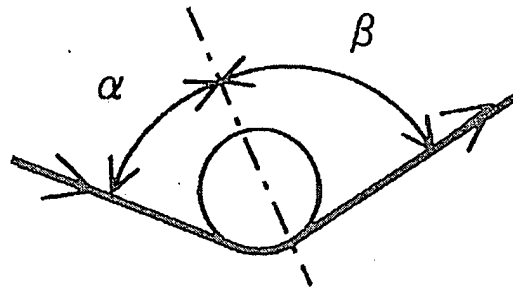
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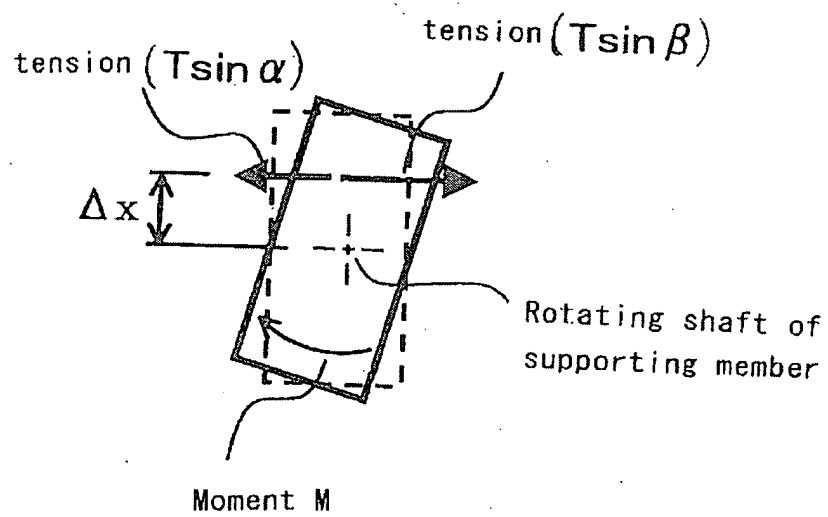
FOR THE EXAMINER'S CONVENIENCE

F i g . A

Mechanism of the yarn path guide
of the present invention



(a)



(b)